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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,586	07/22/2003	Yoon-Seop Eom	1349.1238	5856
21171	7590	05/27/2010	EXAMINER	
STAAS & HALSEY LLP			WILLS, LAWRENCE E	
SUITE 700				
1201 NEW YORK AVENUE, N.W.			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20005			2625	
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			05/27/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,586	EOM ET AL.	
	Examiner	Art Unit	
	LAWRENCE E. WILLS	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 April 2010.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 23-31 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 23-31 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 29, 2010 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 23 and 27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama (US Patent No. 5,872,635) in view of Konno (US Patent No. 6,885,472).

Regarding claims 23, 27, and 28 Akiyama'635 teaches an engine mechanism 25 Fig. 2B to perform a printing operation with respect to print data (print command, column 5, lines 50-55), the engine mechanism 25 Fig. 2B including a paper feeding unit 10a Fig. 2A to pick up paper from a paper feeding cassette sheet by sheet in accordance with a paper feed control signal (paper transporting control column 6, line 35), a laser scanning unit 3 Fig. 2A to form an electrostatic latent image on a photosensitive drum by emitting a laser beam in accordance with image data (modulates a laser beam with video data column 5, lines 57-64), a developing unit 6 Fig. 2A to develop an electrostatic latent image by feeding a developer on the photosensitive drum (developer described in column 5, line 65-column 6, line 5), a transfer unit 7 Fig. 2A to transfer the developed image onto a fed sheet (transfer device described in column 6, lines 2-5) and a fusing unit 13 Fig. 2A to fuse the transferred image onto the paper with heat and pressure (fixing device described in column 6, lines 14-15); a video unit 26 including a microprocessor 16 Fig. 1 to execute software instructions (control program column 5, line 38) to generate image data (video data, column 5, lines 48-50) based on print data (code data, column 5, lines 48-50); an engine control unit 25a Fig. 2B configured to receive operation state information relating to operational states of the engine mechanism (status and command signals, column 65, line 49-51), wherein the microprocessor 16 Fig. 1 of the video unit generates and transmits instruction commands to the engine control unit (CPU outputs a

print command to an engine unit via video interface, column 5, lines 50-55), wherein the engine control unit drives the engine mechanism (engine controller controls the printer main body, column 6, line 18), including the paper feeding unit, the laser scanning unit, the developing unit, the transfer unit and the fusing unit, (printer main body described in column 5, line 58-column 6, line 18) according to the image data and the instruction commands generated and transmitted by the microprocessor of the video unit (CPU outputs a print command to an engine unit via video interface, column 5, lines 50-55) but fails to teach an engine control unit embodied as an application specific integrated circuit (ASIC), the engine control unit including a memory to store the operation state information received from the engine mechanism; and a bi-directional bus provided between the engine control unit and the microprocessor of the video unit, and wherein the video unit and the engine control unit are arranged on a single printed circuit.

Konno'471 teaches an engine control unit embodied as an application specific integrated circuit (ASIC) (E1006 Fig. 8) and a bi-directional bus (control bus E1014 Fig. 8) provided between the engine control unit and the microprocessor (CPU E1001 Fig. 8) of the video unit (column 10, line 67-column 11, line 2), and wherein the video unit and the engine control unit are arranged on a single printed circuit (main PCB Fig. 8) and the engine control unit (E1006 Fig. 8) including a memory (DRAM 2023) to store the operation

state information received from the engine mechanism (motor control buffer, column 11, lines 50-51).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference. In combination, Akiyama'635 performs the same function as it does separately of video unit processing, engine control unit processing, and engine mechanism processing. Konno'471 performs the same function as it does separately of using controlling an ASIC from a CPU using a control bus and storing state information.

Therefore one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately. The results of the combination would have been predictable and resulted in modifying Akiyama'635 to include controlling an ASIC from a CPU using a control bus and storing state information as disclosed by Konno'471. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Regarding claims 24 and 29, Akiyama'635 teaches wherein the microprocessor generates instruction commands (input commands shown in Fig. 3) based on operation state information (output commands shown in Fig. 3

) but is silent on reading state information from the memory of the engine control unit. Konno'471 teaches a memory (DRAM 2023) to store the operation state information received from the engine mechanism (motor control buffer, column 11, lines 50-51).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference. In combination, Akiyama'635 performs the same function as it does separately generating instruction commands based on operation state information. Konno'471 performs the same function as it does separately of storing state information.

Therefore one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately. The results of the combination would have been predictable and resulted in modifying Akiyama'635 to include storing state information as disclosed by Konno'471. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Regarding claims 25 and 30 Akiyama'635 teaches an interface 24 Fig. 1 providing direct connection between the engine control unit 25 Fig. 1 and the

microprocessor 16 Fig.1 but is silent on the interface being a bi-directional bus between the engine control unit and the microprocessor of the video unit. Konno'471 teaches a bi-directional bus (control bus E1014 Fig. 8) provided between the engine control unit and the microprocessor (CPU E1001 Fig. 8) of the video unit (column 10, line 67-column 11, line 2).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference. In combination, Akiyama'635 performs the same function as it does separately providing a direct connection between the engine control unit. Konno'471 performs the same function as it does separately of a bi-directional bus interface.

Therefore one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately. The results of the combination would have been predictable and resulted in modifying Akiyama'635 to include a bi-directional bus as disclosed by Konno'471. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Regarding claims 26 and 31, Akiyama'635 teaches to input and output a horizontal synchronization (HSYNC) signal (/BD is horizontal sync signal

column 1, lines 28-45), a page synchronization signal request signal (PFSNS column 1, lines 58-60) and a page synchronization (PSYNC) signal (/Top Fig. 3) but is silent on wherein the bi-directional bus comprises a control bus.

Konno'471 teaches a bi-directional bus comprises a control bus (control bus E1014 Fig. 8).

Hence the prior art includes each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference. In combination, Akiyama'635 performs the same function as it does separately providing a horizontal synchronization (HSYNC) signal, a page synchronization signal request signal and a page synchronization signal. Konno'471 performs the same function as it does separately of a control bus.

Therefore one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely performs the same function as it does separately. The results of the combination would have been predictable and resulted in modifying Akiyama'635 to include a control bus as disclosed by Konno'471. Therefore, the claimed subject matter would have been obvious to a person having ordinary skill in the art at the time the invention was made.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE E. WILLS whose telephone number is (571)270-3145. The examiner can normally be reached on Monday-Friday 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

LEW

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